

STATE OF MONTANA

2

DEPARTMENT OF STATE LANDS

STATE CAPITOL

HELENA 59601

(406) 449-2074

PLEASE RETURN

February 18, 1976

STATE DOCUMENTS COLLECTION

SEP 1 1978

MONTANA STATE LIBRARY
900 E Lyndale Ave.
Helena, Montana 59601STATE BOARD OF
LAND COMMISSIONERS
THOMAS L. JUDGE
GOVERNOR
DOLORES COLBURG
S.P. OF PUBLIC INSTRUCTION
FRANK MURRAY
SECRETARY OF STATE
ROBERT L. WOODAHL
ATTORNEY GENERAL
E. V. "SONNY" OMHOLT
AUDITOR

Western Energy Company's (WECO) Rosebud Mine is located in Rosebud County, Montana. Initial mining at this site began in 1968.

Attached is a Preliminary Environmental Review (P.E.R.) for the proposed approval of an amendment to WECO's 1974 mining permit. This review assesses the updated information and changes submitted by WECO since the distribution of the Department of State Lands' addendum to the draft environmental impact statement for the Rosebud Mine. The addendum to the draft environmental impact statement was issued on December 23, 1974; the draft environmental impact statement was distributed on November 21, 1973.

TED SCHWINDEN
COMMISSIONER

In this amendment WECO is seeking approval to (1) strip mine 69 acres previously bonded for "roads, railroads, etc."; (2) change the bonding level on 25 acres from associated disturbance to "roads, railroads, etc." and; (3) to convert 347 previously unbonded acres to the "roads, railroads, etc." bonding level.

This review indicates that the issuance of the amended permit to WECO does not constitute an action which might significantly affect the quality of the human environment and therefore a draft environmental impact statement will not be issued by the Department.

This document was prepared in accordance with the amended rules implementing the Montana Environmental Policy Act (Chapter 65, Title 69, R.C.M. 1947). These rules were approved by the Montana Council on Environmental Quality on January 15, 1976.

All materials submitted to the Department by WECO as part of their application for a permit pursuant to the requirements of the Montana Strip Mining and Reclamation Act (Chapter 10, Title 50, R.C.M. 1947) are on file and available for public review in the Department's office in Helena.

Sincerely,

JO ANN E. VOROZILCHAK
Program Manager

JEV:pc

Attachment

Montana State Library



3 0864 1006 5895 7



RESOURCE

FOR THE
PRESENT

OPPORTUNITY

FOR THE
FUTURE



①

②

③

④



PRELIMINARY ENVIRONMENTAL REVIEW

PROPOSED APPROVAL

OF AN

AMENDMENT

TO

WESTERN ENERGY COMPANY'S

1975 MINING PERMIT

SUBMITTED PURSUANT TO THE MONTANA ENVIRONMENTAL POLICY ACT

Section 69-6504(b)(3) R.C.M. 1947

Prepared by

MONTANA DEPARTMENT OF STATE LANDS

Helena, Montana
February 19, 1976

I. Introduction

On December 10, 1975, Western Energy Company (WECO) submitted an application to amend their Surface Mining Permit for Area A of their Rosebud Mine at Colstrip (SMP #74003-A002). The application was deemed complete by the Department on January 5, 1976. WECO is seeking approval to (1) strip mine 69 acres previously bonded for "roads, railroads, etc." (2) change the bonding level on 25 acres from "associated disturbance" to "roads, railroads, etc." and (3) to convert 347 previously unbonded acres to the "roads, railroads, etc." bonding level. The reason for bonding the 347 acres is to "block up" the permit area to eliminate possible violations.¹

WECO's Area A mine has been previously discussed in:

- (a) Department of State Lands, Draft EIS on WECO's Rosebud Mine, November 21, 1973.
- (b) Department of State Lands, Final EIS on Area A-1, December 23, 1974.
- (c) Westinghouse Environmental Systems Department, (for WECO) Montana Strip Mining Permit Application, October 15, 1973.

II. History

The Northern Pacific Railway disturbed 700 acres of land at Colstrip during the years 1924-1958. The spoils were left unreclaimed until 1971 when the Burlington Northern began a voluntary reclamation program. Most of these old spoils are now at some stage of reclamation.

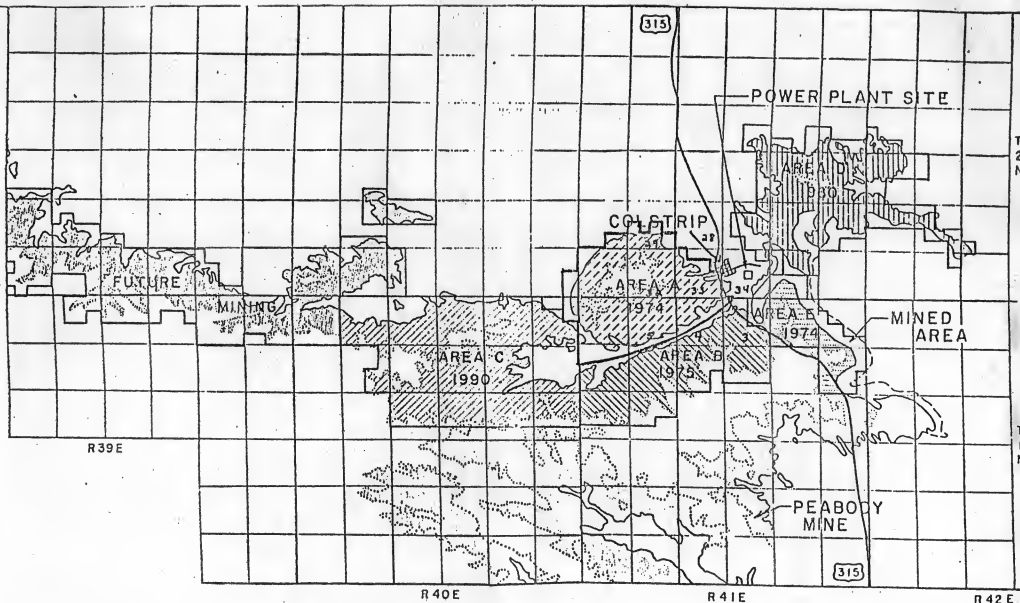
WECO, a wholly-owned subsidiary of the Montana Power Company, acquired the Rosebud Mine from the Northwestern Improvement Company in 1959 and reactivated the mine in 1968. For management purposes, the Rosebud Mine has been divided into Areas A, B, C, D, E, and Pit 6 (Figure 1). In addition, a large area is designated for "future mining". Currently WECO is mining in Areas A and E. Pit 6 has been mined out and is being reclaimed. A Surface Mining Permit Application for Area B is currently being considered by the Department.

Production for the entire Rosebud operation totaled approximately 27 million tons as of December 1975.² Estimated production for Area A through December 1975 was 7.5 million tons. Coal recovery rate in Area A is approximately 95 percent.²

Total mining disturbance in Area A at present is 261 acres with an additional 30 acres involved in haul road construction.

III. Location

The amended permit area designated for active mining is in the S½ of Sec. 33, T2N, R41E, Montana Principal Meridian. This area is immediately to the south and adjacent to the present Area A strip mine. The "road, rail, etc." disturbance areas are located to the south and southwest of the present Area A mine and include the NW¼NW¼ of Sec. 3; N½SW¼ of Sec. 4; and portions of Sec. 5, T1N, R41E; and SE¼ of Sec. 32, T2N, R41E.



Western Energy Company's Rosebud Mine
(adapted from Matson & Blumer, 1973; DNR, 1974)

~ Limit of Rosebud
... 150 ft. overburden limit

Figure I

IV. Mining Plan

The mining plan used will be a continuation of the plan presently in use for the Area A mine.

Mine expansion is to the southwest. Area A's mining plan was reviewed in the Department's Final EIS for Area A-1 distributed on December 23, 1974.

V. Impacts on the Physical Environment

a. Terrestrial and aquatic life and habitats

A preliminary study of the wildlife in the Colstrip mining area was conducted by the Westinghouse Environmental Systems Department in 1972-73.³ This study showed the amendment area to be frequented by Mule Deer and Pronghorn Antelope but that it is not a winter range for either species.

Dr. Frank Munshower of Montana State University reports that he has not seen deer and antelope in the amendment area since the winter of 1974.⁴ Antelope habitat in the Colstrip Area is marginal and antelope generally respond to pressure in this vicinity by moving away.

Sharptail Grouse and pheasants also utilize the amendment area. Sharptails were observed here during the summer of 1975.⁴ Pheasants are often found in the Armell's Creek bottoms and along the roads. A buffer zone is to be left along the East Fork of Armell's Creek. This will protect wildlife and vegetation along the creek bottom. There is no aquatic life to speak of in the section of Armell's Creek, within the amendment area, because the stream flows intermittently.

b. Soils and overburden

Soils are adequately discussed in the Department's Final EIS for Area A, distributed on December 23, 1974. No new soils or overburden information was submitted with this application as no additional analyses were required by the Department. The mining procedure for diluting the high concentrations of elements should be continued.

c. Vegetative cover

Sixty-nine acres of existing vegetation within the amendment area will be destroyed by mining. Existing vegetation will also be destroyed on those areas used for topsoil storage. In addition, native flora communities will be disrupted in those areas designated for associated disturbance.

Mined lands will be reclaimed subject to the provisions of the Montana Strip and Underground Mine Reclamation Act. Long range productivity of the area is dependent upon successful reclamation. According to the Montana Strip and Underground Mine Reclamation Act, the permanent, diverse vegetation cover that is required must be capable of regenerating under natural conditions and be able to withstand grazing pressure comparable to that prior to strip mining.

d. Ground water hydrology

The geohydrologic environment in the vicinity of the Area A mine has two primary features: (1) the bedrock aquifers and (2) the alluvial aquifer of East Fork Armell's Creek. Beds of coal and sand in the Tongue River Member of the Fort Union Formation serve as the shallowest, and most accessible, bedrock aquifers. Deeper aquifers principally the Tullock Member of the Fort Union are also locally used, but are unaffected by present mine activity. Van Voast and Hedges, 1974 describe ground water use of bedrock aquifers in the area:⁵

In township tiers 3N (part) and 2N, most wells and springs obtain water from aquifers stratigraphically below the McKay coal bed. Most of these sources are sandstone aquifers near the base of the Tongue River Member and the top of the Tullock Member of the Fort Union Formation. In township tiers 1N and 1S, aquifers stratigraphically below, between, and above the strippable coal beds are all heavily relied upon as sources of ground water. Yields of most wells are less than about 10 gallons per minute but are adequate for most stock and domestic needs. Yields as great as about 50 gallons per minute have been obtained for the town of Colstrip from sandstone in the Tullock Member. All springs inventoried near Colstrip supply water for stock. Almost all of them flow less than 5 gallons of water per minute.

Mining activity already permitted at Area A has encountered very little ground water flow. Van Voast and Hedges (1974), reported that the Rosebud seam is dry in most of the presently permitted area. The additional area requested for mining in the amendment is either dry or substantially drained by the existing operation. As an indication of the scarcity of intercepted groundwater, there has been insufficient water at the Area A mine for the spraying of haul roads. Water must be hauled from lakes that exist in previously mined areas east of East Fork Armell's Creek. Since the Rosebud seam is dry or substantially drained in the area requested for mining, impacts on the bedrock aquifer system will be minimal.

The alluvial aquifer of East Fork Armell's Creek is the most important near surface source of groundwater in the area. Current work by Van Voast and Hedges (personal communications) shows that this aquifer is recharged by both intermittent stream flow in the channel and from bedrock aquifers which subcrop the valley alluvium. In the valley reaches upstream of Colstrip in the vicinity of the Area A mine, the principal bedrock aquifer recharging the alluvian system is the McKay coal seam. Since mining activity does not disrupt the McKay seam, impacts on the alluvial aquifer from extended mining activities are unlikely.

e. Surface water hydrology

Encroachments on the channel and floodplain of East Fork Armell's Creek have been made by WECO in the construction of mine facilities and in the construction of a realigned county road. No new encroachment are applied for in the amendment request, however, some of the previous disturbance will now be placed under bond. Particularly, near the coal storage area, two meander bends of the channel, abandoned by channel realigned to accommodate the new county road, will now be permitted for use as settling ponds.

Any drainage from mining disturbed areas passes through settling pond facilities.

f. Air quality

Air quality should not change substantially from its present state as this represents an extension of the present Area A strip mine. Current mitigation practices of watering the haul roads and planting vegetative cover on the topsoil stockpiles will continue. No increase in equipment usage is anticipated. Cumulative impacts on air quality resulting from the simultaneous operation of several strip mine sites and two or more electric generation plants is yet to be determined.

g. Unique, endangered, fragile, or limited environmental resources

The Department has determined that this amended permit area does not possess special, exceptional, critical, or unique characteristics as defined in Section 9(2) of the Montana Strip and Underground Mine Reclamation Act.

h. Historical and archaeological sites

The historical and archaeological survey submitted as part of WECO's 1973 Surface Mining Permit application showed that there are no sites of enduring interest within the amended permit area.⁶

i. Aesthetics

The added new acreage is small compared to the area already mined. As it is remote from the highway its visual impact would be minimal. The regrading, recontouring and revegetation will eventually restore the visual effect of low rolling hills.

VI. Impacts on the Human Environment

a. Agriculture

Historically, Area A has been utilized as both rangeland and hay and grain production. Data for recent production of winter wheat, spring wheat and oats in Section 33 show that production is good for a summer-fallow agricultural system (Appendix A). The majority of the NE $\frac{1}{4}$ of Section 4, an area proposed for "roads, rails, etc." disturbance, has in the past been sown to winter wheat with production data similar to that for the cropland in Section 33. The NE $\frac{1}{4}$ of Section 5, portions of which are proposed for "roads, rails, etc." disturbance, has produced 1 to 1 $\frac{1}{2}$ tons of alfalfa per acre.

If reclamation is successful, the long term use of the land for agricultural purposes will be altered but not eliminated. If not successful, the surface utility of the land for agriculture will have been sacrificed for mining.

Mining will change the contour of the land to the extent that cliffs or steep slopes will be reduced to a 5:1 gradient. The topography of the land will will thus be reduced to a rolling contour.

b. Employment and income

Approval of this amended permit will not add to the current WECO work force. Western Energy reports that 262 men currently work in their Colstrip mining endeavors for their general contractor, Long Construction.² In addition WECO directly employs eight people at Colstrip. The above employment figures do not include personnel involved with drag line, rail-road, or generating plant construction.

The estimated annual payroll for the 270 persons mentioned above is \$3.2 million.²

c. Housing

Since there will be no additions to the current work force housing problems will not result from this expansion of the Area A mine. Of the 262 persons working for Long Construction 181 live in the town of Colstrip, 46 in Forsyth and the remainder in other areas.² At the present time 57 employees for Long Construction wish to obtain living quarters in Colstrip - which is indicative of the intense local demand for housing.²

d. Transportation and traffic

Since there will not be an increase in the number of mine employees, increased traffic flows in the area of the mine are not expected.

e. Taxes

Area A of WECO's Rosebud Mine provides considerable income to the State of Montana and to Rosebud County in the form of tax revenues. Table 1, below, gives estimates of the taxes accrued in 1975 from the Area A coal production. These sums are payable in current and future periods.

Table 1 - Estimated 1975 Taxes Accrued - Area A, Rosebud Mine¹

<u>Resource Indemnity</u> ²	<u>Property</u> ³	<u>Severance</u> ⁴	<u>Gross Proceeds</u> ⁵
\$41,420	\$115,170	\$3,008,000	\$496,500

- (1) Estimates provided by WECO.
- (2) To the state
- (3) Mostly to the county, as a rule of thumb, 98% of all property taxes go to local government.
- (4) The new coal severance tax, effective July 1, 1975, provides revenues for the state general fund and to eight other funds.
- (5) Basically a property tax to the county.

Approval of this amended permit by the Department reduces the chance of reduction in coal generated tax revenue to both Rosebud County and the State of Montana.

f. Demands for Energy

Coal mined in the amendment area will be utilized for electrical generating purposes in Midwestern cities. Such coal also helps urban power companies meet SO_x emission standards and so improve air quality for their customers.

The Colstrip area has two principal coal seams that are strippable - the Rosebud and the McKay. WECO is currently only mining the Rosebud seam as the McKay is unsaleable because of its high sulfur content (about 1.5%) and poor combustion characteristics (it causes clinkers even in specifically designed furnaces and it blends with other coals).⁷ If future economic or technological changes, dictated that the McKay seam be removed and utilized, renewed surface disturbance of reclaimed areas is possible.

Current day usage of the strippable, low sulfur Rosebud coal eliminates the possibility of its use at a future time when demand may be even greater.

VII. Alternatives to the Proposed Action

Denial of this permit amendment would cause a cessation of mining activities in Area A. Area A coal is used to fulfill contracts with several Midwestern power companies. Denial of this permit amendment would therefore force these companies to seek alternate or supplemental sources of low-sulfur coal with good burning characteristics. Alternatives are more thoroughly discussed in the Department's draft EIS on WECO's Rosebud Mine distributed on November 21, 1973.

VIII. Compilation and Writing of the PER

Department of State Lands' personnel involved in writing this PER are: Jo Ann Vorozilchak, Program Manager; Brace Hayden, Environmental Coordinator; Jack Schmidt, Hydrologist. The assistance of Mr. Mike Grende, Permit Supervisor, Western Energy Company; Dr. Frank Munshower, Reclamation Research Office, Montana State University; and Pamela Crocker, typist, is appreciated.

VIII. References Cited

1. Western Energy Company, December 10, 1975, Transmittal Letter - Amendment Application to Surface Mining Permit No. 74003-A002.
2. Personal communication with Michael R. Grende, Permit Supervisor, WECO, February 10, 1976 and February 17, 1976.
3. Westinghouse Environmental Systems Department, 1973, Montana Strip Mining Permit Application by Western Energy Co., Box 1899, Pittsburgh, Pennsylvania.
4. Personal communication with Dr. Frank Munshower, Reclamation Research Office, Montana State University, February 3, 1976.
5. Van Voast, Wayne A. and Robert B. Hedges, 1974, Hydrology of Western Energy Company's Probable Mine Areas near Colstrip, Southeastern Montana, Preliminary Report, Montana Bureau of Mines and Geology.

6. Fredlund, Lynn B. and Dale E. Fredlund, 1973, Western Energy Company Archaeological Investigations Rosebud County, Montana; Montana College of Mineral Science and Technology Foundation, Minerals Research Center, Butte, Montana.
7. Personal communication with Tom Finch; Coal Mining Technology Class, Montana College of Mineral Science and Technology, spring 1975.

APPENDIX A

PRODUCTION RECORDS FOR THE CROPLAND IN SECTION 33⁽¹⁾

(T2N, R41E, Rosebud County, Montana)

<u>YEAR</u>	<u>WINTER WHEAT</u>		<u>SPRING WHEAT</u>		<u>OATS</u>		<u>SUMMER- FALLOW ACRES</u>
	<u>Acres</u>	<u>Bu./Ac.</u>	<u>Acres</u>	<u>Bu./Ac.</u>	<u>Acres</u>	<u>Bu./Ac.</u>	
1968	64.5	40.0 ⁽²⁾					58.0
1969 ⁽³⁾					58.0	49.6	64.5
1970	35.9	33.3			28.6	42.0	58.0
1971 ⁽⁴⁾	4.3	19.9	53.7	19.9			64.5
1972 ⁽⁵⁾	64.5	20.0 ⁽²⁾					58.0
1973	58.0	37.2					64.5
1974 ⁽⁶⁾	64.5	36.4	58.0	8.0			

(1) Data supplied to WECO by Burlington Northern Resources Development Department, Miles City, Montana.

(2) Estimated

(3) 15-20% loss estimate due to hail damage.

(4) 5-100% loss estimate due to severe wind and hail damage.

(5) 34-43% loss estimate due to hail damage.

(6) Spring Wheat stubbled in.